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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,424	06/27/2001	Kenji Hirano	3620-4010	5090

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EXAMINER	
CHEN, WENPENG	
ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/622,424	HIRANO ET AL.	
	Examiner	Art Unit	
	Wenpeng Chen	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-24* is/are allowed.

6)☒ Claim(s) *9-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *18*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Examiner's responses to Applicant's remark

1. Applicants' amendments filed on 5/17/2004 overcome:

-- the objection to drawings set forth in paper #14;

-- the objection to specification set forth in paper #14;

-- the rejection to Claims 9 and 13 under 35 U.S.C. 102(e) as being anticipated by Dockser (US patent 5,764,357) set forth in paper #14.

2. Applicants' arguments filed on 5/17/2004 with regard to art rejections based on Kim (US patent 6,055,272) have been fully considered but they are not persuasive.

Applicants' argument -- With regard to Claims 9-10 and 13-14, Kim fails to make reference to whether element 10 of Kim has any function that corresponds to the claimed features.

Examiner's response -- Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out why the Applicants conclude that element 10 lacks any function that corresponds to the claimed features.

Element 10 of Kim is a run length encoder core taking in odd and even coefficients and outputting run and level values. It is well known to a ordinary person skill in the art of run length coding that there inherently is a counter for counting the number of consecutive invalid coefficients until a valid coefficient is encountered. This feature is needed to generate the "run1"

and "run2" shown in Fig. 2. The Applicants need to explain in more details why they concluded that element 10 of Kim lacks any function that corresponds to the claimed features.

3. Applicant's arguments with regard to art rejections to Claims 11-12 and 15-16 based on Jan (US patent 5,363,097) have been considered but are moot in view of the new ground(s) of rejection due to the amendments.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 9-10 and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (US patent 6,055,272 cited previously.)

Kim teaches a Huffman encoder for encoding DCT coefficients into Huffman codes comprising:

-- a storage that stores a plurality of DCT coefficients; (column 3, lines 22-29; Before quantized DCT coefficients are scanned, the coefficients must be stored in a memory. Without

the storage, the zigzag scanning cannot be performed because the DCT is performed in column or row order. To scan DCT coefficients in zigzag order, the coefficients must be stored at first.)

-- a reader that reads a plurality of the DCT coefficients stored in said storage means at a time; (The odd and even coefficients are input to element 10 of Fig. 2.; column 3, lines 30-42)

-- a plurality of data buses that respectively transfer a plurality of the DCT coefficients read by said reader from said storage in parallel; (the lines inputting the odd and even coefficients into element 10 of Fig. 1)

-- a plurality of data storage that store input data and output the same in the order of input; (column 2, lines 7-14; column 4, lines 48-55; column 6, lines 8-14; Because the time for determining run length is not a constant, the values "run1", "run2", "level1", and "level2" in Fig. 2 have to be buffered for synchronized with other process, such as output from zero block detector 30, so the multiplexing of 42, 44, 46, and 48 can be meaningfully performed. Therefore, "level1" and "level2" inherently need to be stored separately in individual storage means, respectively. The passage in column 2, lines 7-14 further teaches that "level1" and "level2" shall be outputted in the order of their inputs to element 10 and thus the storage means.)

-- a counter that counts the number of consecutive invalid coefficients until a valid coefficient is encountered in the DCT coefficients transferred through said plurality of data buses in parallel to sequentially input data constituted by combinations of the number of consecutive invalid coefficients and a valid coefficient to said plurality of data storages; (element 10 of Fig. 2; column 3, lines 30-42; column 4, lines 49-55; *The plurality storages are inherently inside the element 10 to store run1, run2, level1, level2. Without the storages, the MUX1-MUX4 cannot be properly operated.*)

-- a selector that sequentially selects any of the data respectively output from said plurality of data storages and output the same; (column 2, lines 7-14; column 3, lines 21-42; column 4, lines 48-55; column 6, lines 8-14; The passage in column 2, lines 7-14 further teaches

that "level1" and "level2" shall be outputted in the order of their inputs to element 10 and thus the storage means. Therefore, (run1, level1) and (run2, level2) are sequentially selected and fed into VLC 5 of Fig. 1 in a single bit stream according to their order given in column 2, lines 7-14.)

-- an encoder that performs a Huffman encoding process based on the data sequentially output from said selector to generate Huffman codes. (column 1, lines 47-53; column 3, lines 21-30; VLC unit 5)

Kim also teaches the corresponding method recited in Claims 13 and 14.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
>
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 11-12 and 15-16 are rejected under 35 U.S.C. § 103 as being unpatentable over Jan (US patent 5,363,097 cited previously.)

Jan teaches a Huffman decoder for decoding Huffman codes into DCT coefficients comprising:

-- a decoder that performs a Huffman decoding process on Huffman codes input thereto to sequentially output data constituted by combinations of the number of consecutive invalid coefficients and a valid coefficient; (Figs. 2, 4, and 5; column 2, lines 32-54; column 5, lines 38-

57; column 6, lines 11-30; The (run-length of zeros, amplitude) codeword is generated in the decoding process.)

-- a plurality of data storage that stores data and output the same in the order of input; (column 6, lines 11-68; Fig. 5; the FIFO data buffers)

-- a selector that selects any of the data output from said decoder and sequentially inputs the same to said plurality of data storages; (Fig. 5; column 6, lines 26-30; The data are segmented and distributed. The distributing action inherently comprises a selection means.)

-- generation means for generating DCT coefficients based on the data output from said plurality of data storages and for outputs a plurality of the generated DCT coefficients in parallel; (column 6, lines 11-68; Fig. 5; Because (1) the (run-length of zeros, amplitude) codewords carry information of DCT coefficients and (2) the outputs of RLDs are used for IDCT transformation, it is evidently that the RLDs generates DCT coefficients based on the outputs from the VLD.)

-- a plurality of data buses that respectively transfer said plurality of the DCT coefficients output by said generation means in parallel; (Fig. 5, The output lines from the RLDs of Fig. 5 are the buses.)

-- a storage that stores a plurality of DCT coefficients; (column 3, lines 46-59; Figs. 2 and 5; In the recited standards, DCT coefficients are stored before IDCT process because the RLDs generate DCT coefficients in a zigzag order and the IDCT is performed in a row or a column. Therefore, the output from RLDs of Fig. 5 are inverse quantized and stored in a memory before IDCT.)

-- a writer that writes a plurality of the DCT coefficients transferred through said plurality of data buses in said storage means in parallel. (Fig. 5; The generated DCT coefficients of L1-L4 and C1-C2 are inputs to memories before IDCT through the bus lines indicated in Fig. 5.)

However, Jan's generation means consists of six RLDs. Although the combination of the six RLDs is considered as a single generation means, physically they are not necessary to be a single generator.

How to arrange the six RLDs in a circuit is just a design choice. The six RLDs can be placed together in an integrated circuit chip to simplify circuit package or fabrication. When they are placed in a single circuit chip, they become a single generator.

It is desirable to have design flexibility. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine Jan's six RLDs into a single circuit chip to form a single generator because such a modification provides design flexibility. Evidently, with such a modification, Jan obviously teaches every recited limitations of Claims 11-12.

The above-cited passages and modification also teach the corresponding method recited in Claims 15 and 16.

Allowable Subject Matter

8. Claims 17-24 are allowed.

A statement of reasons for the indication of allowable subject matter has been given in paper #14.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Wenpeng Chen
Examiner
Art Unit 2624

August 5, 2004